

WHAT IS CLAIMED IS:

1. An automated system for analyzing samples, the system comprising:
 - a first purge and trap concentrator configured to receive a first sample stream;
 - a second purge and trap concentrator configured to receive a second sample stream; and
 - an analyzer coupled to the first and second concentrators, the analyzer receiving a first focussed analytic slug from the first during a first state, and a second focussed analytic slug from the second concentrator during a second state.
2. The system of claim 1, wherein the first and second concentrators are fluidically coupled together in series.
3. The system of claim 1, and further comprising a switch box coupled to the analyzer and the first and second concentrators, the switch box receiving an analyzer ready signal from the analyzer and selectively providing the signal to one of the first and second analyzers.
4. The system of claim 1, wherein the analyzer is a gas chromatograph.

5. The system of claim 1, wherein the first concentrator is coupled to the analyzer to receive a flow of carrier gas therefrom.
6. The system of claim 5, wherein the first analyzer has a sample outlet port that is coupled to the second analyzer through a sample transfer line.
7. The system of claim 6, wherein the sample transfer line is coupled directly to a multiport valve in the second analyzer.
8. The system of claim 7, wherein the sample transfer line is heated.
9. The system of claim 6, wherein the sample transfer line is heated.
10. The system of claim 1, and further comprising:
 - a first autosampler coupled to the first concentrator to provide the first sample stream; and
 - a second autosampler coupled to the second concentrator to provide the second sample stream.
11. A method of analyzing samples, the method comprising:

purging a first sample stream onto a first trap
to concentrate the first sample stream upon
the first trap;

desorbing the first concentrated sample from the
first trap to an analyzer and analyzing the
first concentrated sample while purging a
second sample stream onto a second trap to
concentrate the second sample stream upon
the second sample trap;

desorbing the second concentrated sample from
the second trap to the analyzer and
analyzing the second concentrated sample.

12. The method of claim 11, wherein the method is repeated, and wherein during the desorbing and analyzing of the second concentrated sample, the first sample stream is again purged onto the first trap.

13. The method of claim 11, wherein sequencing of the purge and desorb states for the first and second traps is controlled by a switch box coupled to the analyzer.

14. The method of claim 11, wherein analyzing the first and second concentrated samples includes performing gas chromatographic analysis on the first and second concentrated samples.

15. The method of claim 11, wherein the steps of desorbing the first concentrated sample and desorbing the second concentrated sample are mutually exclusive.

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